

REMARKS

Claims 8-18 are pending in the above-identified application. Claims 8-18 were rejected. Accordingly, claims 8-18 are at issue in the above-identified application.

35 U.S.C. § 102 Anticipation Rejection of Claims

Claims 8-19 were rejected under 35 U.S.C. § 102(e) as being anticipated by *Hayashi et al.* Claim 8 recites a magnetic tunnel effect type magnetic head comprising a magnetic tunnel junction element sandwiched with upper and lower conductive gap layers between upper and lower magnetic shielding layers, wherein at least one of the conductive gap layers is formed from at least one nonmagnetic metal layer containing a metal element selected from Ta, Ti, Cr, W, Mo, V, Nb and Zr, wherein the magnetic tunnel junction element includes a free layer on a fixed layer, and wherein a width of the free layer is equal to or less than a width of the fixed layer. Conventionally, Aluminum (Al) is used to form a nonmagnetic metal layer such as the conductive gap layers. However, materials such as Ta, Ti, Cr, W, Mo, V, Nb and Zr used to form the conductive gap layers in the present invention are relatively hard and superior in mechanical characteristics to Aluminum.

While *Hayashi et al.* discloses a magnetoresistive effect element having a lower gap layer 21 and/or an upper gap layer 22, the materials that *Hayashi et al.* suggests to use for these layers do not include Ta, Ti, Cr, W, Mo, V, Nb and Zr, as claim 8 recites, but rather discloses a mixture comprising Al oxide, silicon oxide, aluminum nitride, silicon nitride or diamond-like carbon. (See *Hayashi et al.*, column 16, lines 19-22). Furthermore, while *Hayashi et al.* suggests using a mixture comprising Au, Ag, Cu, Mo, W, Y, Ti, Zr, Hf, V, Nb, Pt or Ta for a lower electrode layer 12, *Hayashi et al.* does not teach or disclose that such a mixture may be used for a

conductive gap layer. Additionally, while *Hayashi et al.* discloses that the lower shield layer 11, and the lower electrode 12 and/or the upper electrode layer 14 and the upper shield layer 15 may be combined, or may also be provided separately, *Hayashi et al.* does not disclose that the lower shield layer 11 and the lower electrode layer 12 and/or the upper electrode layer 14 and the upper shield layer 15 may be combined with lower gap layer 21 and/or upper gap layer 22. To the contrary, *Hayashi et al.* actually suggests that an upper gap layer may be provided *between* the upper electrode layer 14 and the upper shield layer 15, and a lower gap layer may be provide *between* the lower shield layer 11 and the lower electrode layer 12. This suggests that the lower gap layer is completely separate and apart from the lower shield layer 11 and the lower electrode 12 and/or the upper electrode layer 14 and the upper shield layer 15. This suggestion is further reinforced by the fact that *Hayashi et al.* discloses separate lists of materials to use for the lower electrode layer 12, the upper electrode layer 14, the lower shield layer 11, the upper shield layer 15, the lower gap layer 21, the upper gap layer 22. (See *Hayashi et al.*, column 15, line 59-column 16, line 25. Therefore, since *Hayashi et al.* never teaches or suggests using Ta, Ti, Cr, W, Mo, V, Nb or Zr for a conductive gap layer, *Hayashi et al.* does not anticipate claim 8. Withdrawal of these rejections are respectfully requested.

In view of the foregoing, Applicant submits that the application is in condition for allowance. Notice to that effect is requested.

Respectfully submitted,

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